ELECTRONIC WARFARE FLIGHT TEST FACILITY

The Electronic Warfare Flight Test Facility (EWFTF) is a component of the Chesapeake Test Range (CTR), and is comprised of a wide variety of highly sophisticated equipment that supports the test and evaluation requirements of the Naval Air Warfare Center Aircraft Division's test and evaluation community. These discrete systems (made up of transmitters, receivers, tracking and slaved antenna pedestals, fixed antennas, emitter control circuitry and computers) are configured to generate a wide variety of radar and communication radio frequency (RF) signatures in support of aircraft EW avionics test measurements. The EW facility also develops, maintains, and operates special purpose data acquisition, processing and display systems. The combination of these systems and the RF signature generators is used to support a wide variety of in-flight EW integration test measurements.

EW WORKSTATION CONSOLIDATES DATA PROCESSING, DISPLAYS

The EWFTF's Electronic Warfare Engineering Workstation provides integration and consolidation of EW test data and control of emitters in a real time operating environment. The EWFTF has the capability of controlling, processing and displaying emitter signatures, time-space position information (TSPI), aircraft telemetry data, and EW test measurements. By integrating and consolidating EW facility data, tracking radar's TSPI data, telemetry data, and range control, the majority of EW data processing and display can be accomplished in one controlled area. This eliminates the need for multiple test observers and engineers to be scattered at various geographically spaced test facilities. It enables real-time data control, analysis and display of EW ground support emitters, EW test measurements and correlation of aircraft's telemetry data to conduct aircraft EW system performance.

An integral part of the EWFTF is the Electronic Warfare Automated Control Emitter System (EWACES). This system provides a reprogrammable multi-emitter environment over a wide frequency range, thereby providing a realistic high density radiated signal environment. Specifically, the system has the capability to simultaneously control over 76 emitters, ranging from .5 to 18 GHz plus 35 GHz. Each of these emitters has the flexibility to program associated parameters such as on/off time, frequency, pulse width, pulse repetition interval, stagger, jitter, and scan rate, pattern and type.

Each emitter can be programmed manually or automatically loaded from an on-line emitter data base currently consisting of over 5000 emitter modes. EWACES can also generate and control up to 32 communication signals ranging from 2 to 2000 MHz. In addition to frequency control, modulation types such as AM, FM, OOK, PSK, FSK, SSB, etc. can be imposed. Radiation of these emitters is coordinated through the Mid Atlantic Frequency Coordination office which is also a CTR function. This close relationship between the Mid Atlantic Frequency coordinator and the EWFTF at CTR allows efficient allocation of the RF spectrum and minimizes frequency restrictions. Remotely controlled spectrum analyzers provide real-time monitoring of the EWACES emitter output and the airborne jammer output.

For more information about the EW Flight Test Facility, contact the Chesapeake Test Range at Patuxent River, MD, at (301) 342-1211 or DSN 342-1211.